

# SERVICE MANUAL

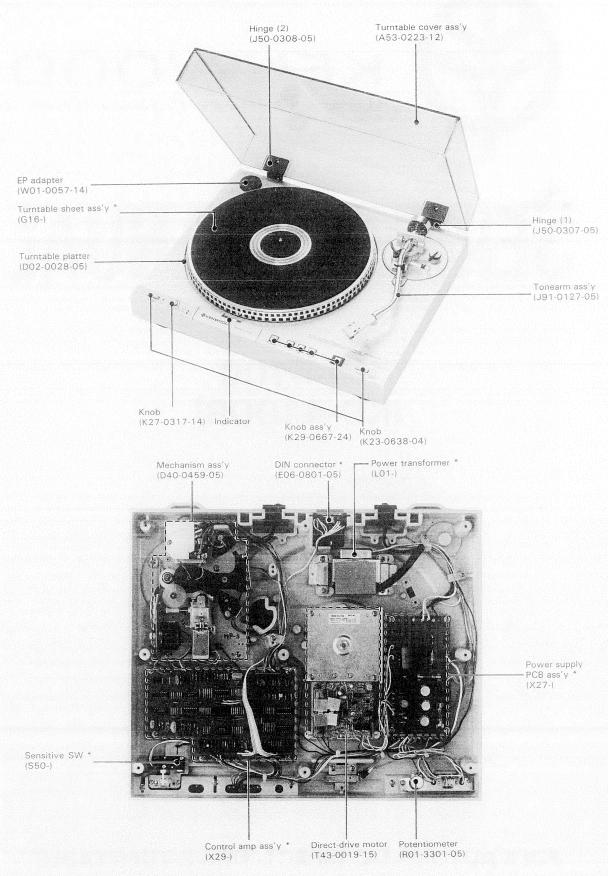
KD-4100 (KD-4100R)



FULL AUTOMATIC DIRECT- DRIVE TURNTABLE

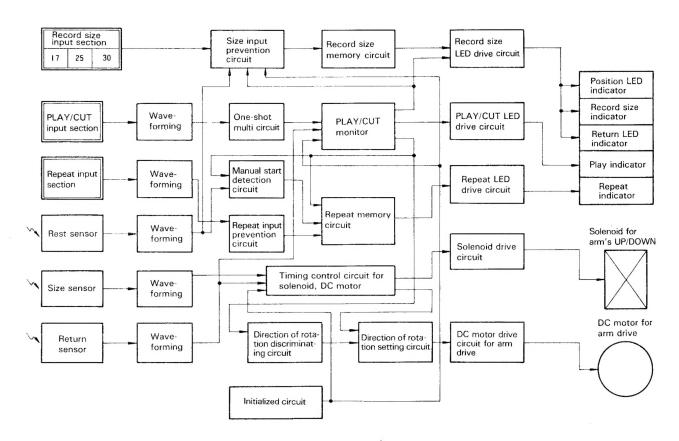


### EXTERNAL AND INTERNAL VIEW





### **BLOCK DIAGRAM / DISASSEMBLY FOR REPAIR**



### **DISASSEMBLY FOR REPAIR**

### Disassembling auto mechanism and tonearm-related parts

- 1. Remove the shield plate retaining screw.
- 2. Remove the repeater PCB retaining screw.
- 3. Remove the mounting hardware.
- 4. Remove the search arm retaining screws.
- 5. Remove the auto mechanism retaining ass'y retaining screws.

Caution: The lead wire from the tonearm is soldered to the intermediate plate.

Shield plate

Intermediate plate (Note)

Mounting hardware

3 Loosen

Search arm

Auto mechanism ass'y

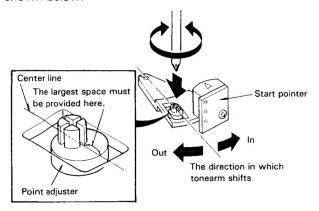
< Disassembling the auto mechanism >



### **ADJUSTMENT**

#### 1. Installing the start pointer and return holder

Install the start pointer and return holder so that the cross cut-off of the point adjuster is aligned with the center line passing through the rotational center as shown below.

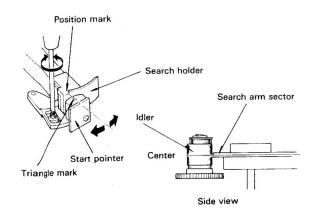


**NOTE:** Position the start pointer and return holder correctly, as the position of these parts are essential to determine the start and return positions.

#### 2. Installing the search arm

- 1. Return the tonearm to the arm rest.
- 2. Center the start pointer (refer to the "Installing the start pointer and return holder").
- 3. Install the search arm so that the position mark of the search arm is aligned with the triangle mark of the start pointer.

**NOTE:** Install the search arm so that the end of the search arm sector contacts the idler center.

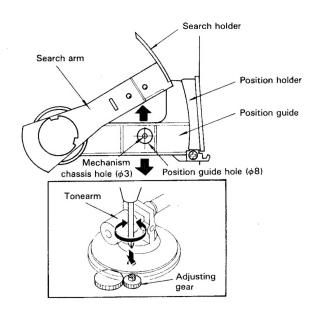


#### 3. Position holder and guide

Before adjusting the position holder, align the position guide hole with the mechanism chassis hole.

Pass the +screwdriver through the tonearm base access hole and adjust the position holder. Turning the screwdriver clockwise shifts the tonearm inwards and turning the screwdriver counterclockwise shifts the tonearm outwards. Turning the screwdriver 60° will

shift the stylus tip by 0.85 mm. The position holder can be turned by 3.2 turns.

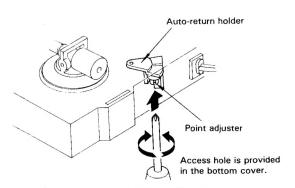


#### 4. Adjusting the auto-in position

Adjust the auto-in in the 30 cm record auto-in mode. Put the turntable in the 30 cm record auto-in mode. Play back the test record. Adjust the auto-in adjusting gear through the tonearm base access hole so that the auto-in action starts at  $26 \pm 3$  counts of the test record (refer to the ''Position holder and guide'').

#### 5. Adjusting the auto-return position

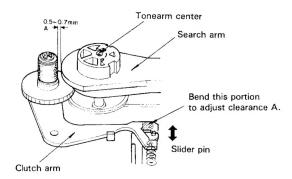
Use the test record to adjust the auto-return position as well as for auto-in adjustment. Adjust the point adjuster so that the auto-return action starts at the 17 count of the test record (through the access hole on the bottom cover).



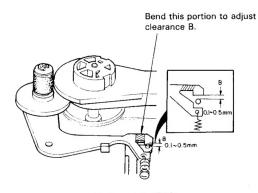
< Auto-return position adjustment >



### Adjusting the clearance between the idler and clutch arm.



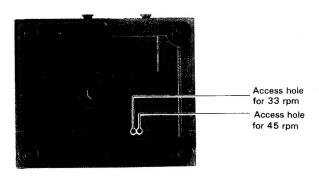
< Solenoid: OFF>



<Solenoid: ON>

#### 7. Adjusting the motor speed

If the correct speed is not obtained by turning the fine speed adjustment knob, turn the PC trimming pots of the motor PCB. Always center the fine-speed adjustment knob before adjusting the PC trimming pots. When adjusting the PC trimming pots, make sure the turntable is level. **Access holes are provided in the bottom cover.** 



< Positions of the speed adjustment access holes >

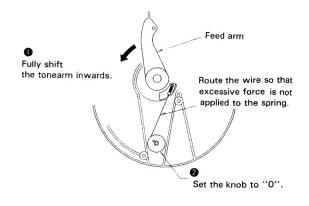
### KENWOOD test record 3 (P-3027) (Part No.: T99-0204-05)

This test record is for auto lead-in and auto lead-out position adjustment and S/N measurement. In the KD-4100 (R), use the A side to adjust the auto-in and auto-out positions. The contents of this record are as shown below.

Band	Contents		Remarks
	30 cm lead-in	n groove	
1	L-ch: Announcement (1 ~ 65)	R-ch: 1 kHz	Lead-in position adjustment
	25 cm lead-ir	n groove	
2	L-ch: Announcement (1 ~ 65)	R-ch: 1 kHz	
	17 cm lead-ii	n groove	
3	L-ch: Announcement (1 ~ 65)	R-ch: 1 kHz	
	30/17 cm lead-	out groove	
4	L-ch: Announcement (1 ~ 59)	R-ch: 315 Hz	Lead-out position adjustment

#### 7. Adjusting the inside force canceller

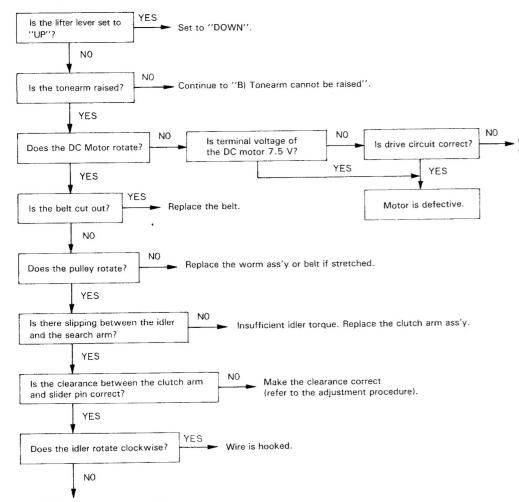
- 1. Fully shift the tonearm inwards.
- Route the inside force canceller wire so that excessive force is not applied to the canceller cam ass'y spring.
- 3. Set the canceller knob to "0". At this time, the condition indicated in item 2 must be maintained.



## **KD-410**

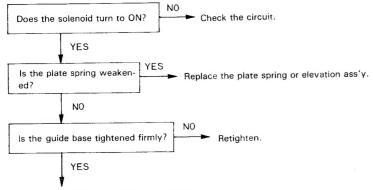
### **TROUBLESHOOTING**

#### A) Auto start does not operate.



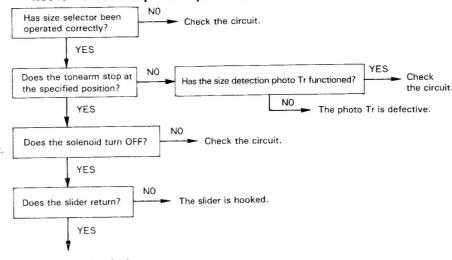
The start pointer is incorrectly adjusted.

### B) Tonearm cannot be raised.



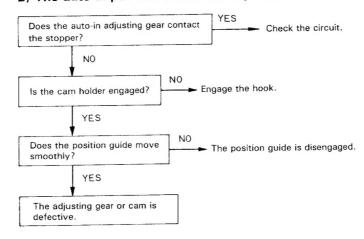
### Insufficient tightening of the arm support screw.

### C) Auto lead-in cannot be started (the tonearm does not lower at the specified position.)

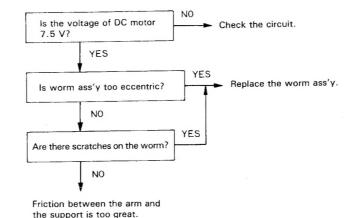


Tonearm ass'y is defective.

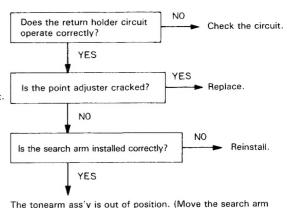
### B) The auto-in position cannot be adjusted.



#### E) The tonearm is knocking.

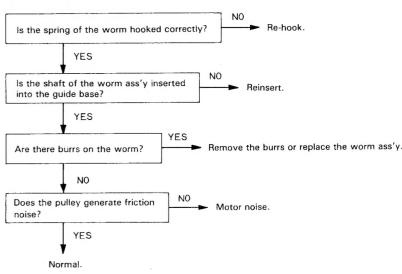


#### F) Auto-return position cannot be adjusted.

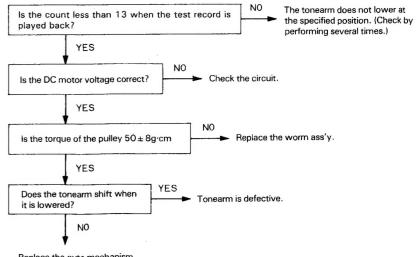


in the same direction in which the tonearm is moved.)

### G) The DC motor generates abnormal noise.

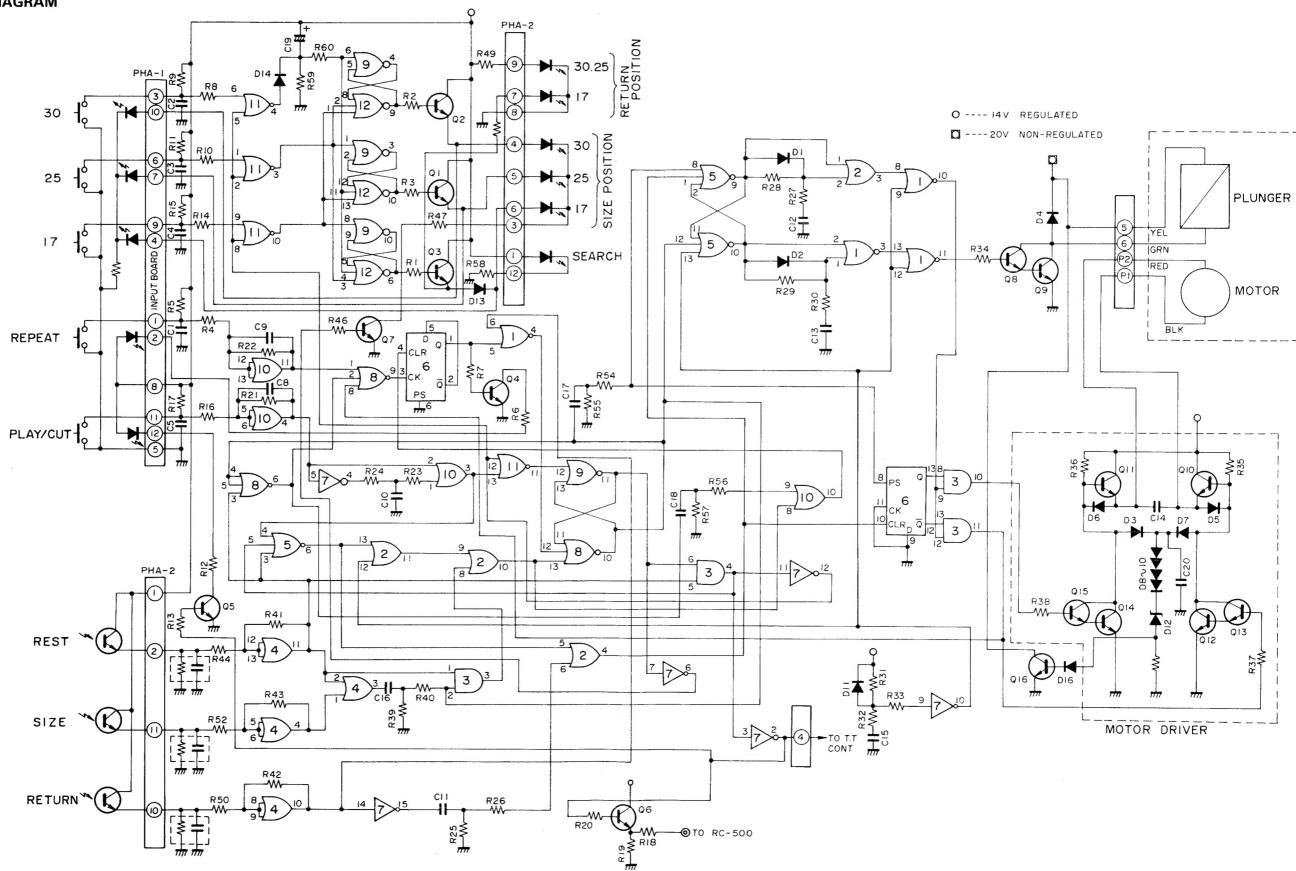


### H) There is too much difference between the auto-in and repeat-in.



Replace the auto mechanism.

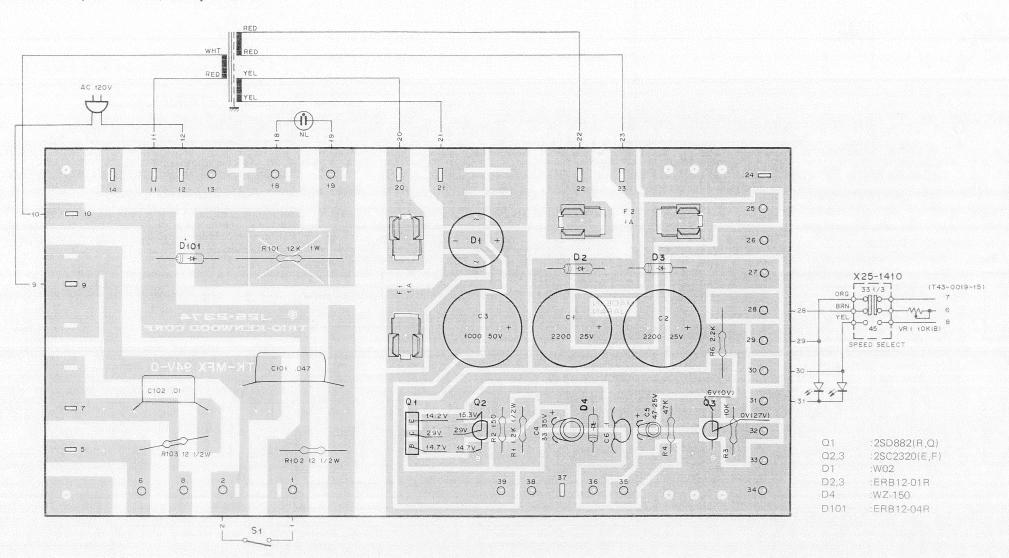
### **LOGIC DIAGRAM**



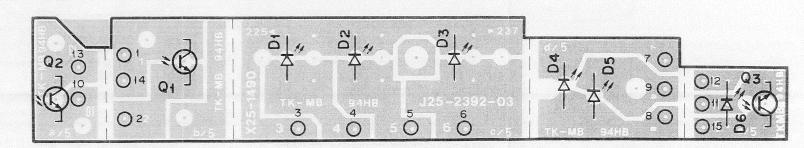


### PC BOARD

### POWER SUPPLY (X27-1370) Component side



#### SENSOR (X25-1490-00) Foil side



Q1~3 :TPS605 D1~6 :TLR121

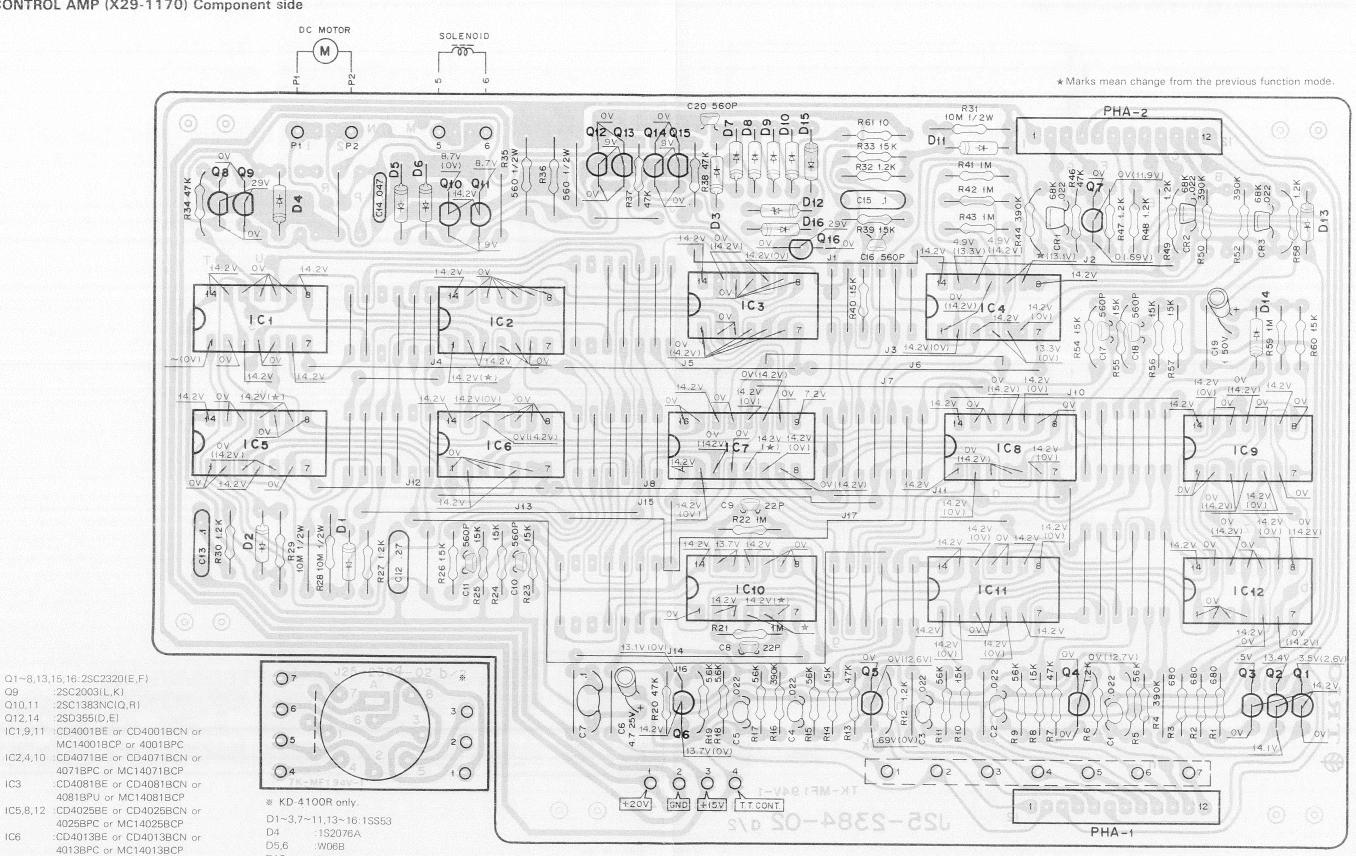
### PC BOARD

### CONTROL AMP (X29-1170) Component side

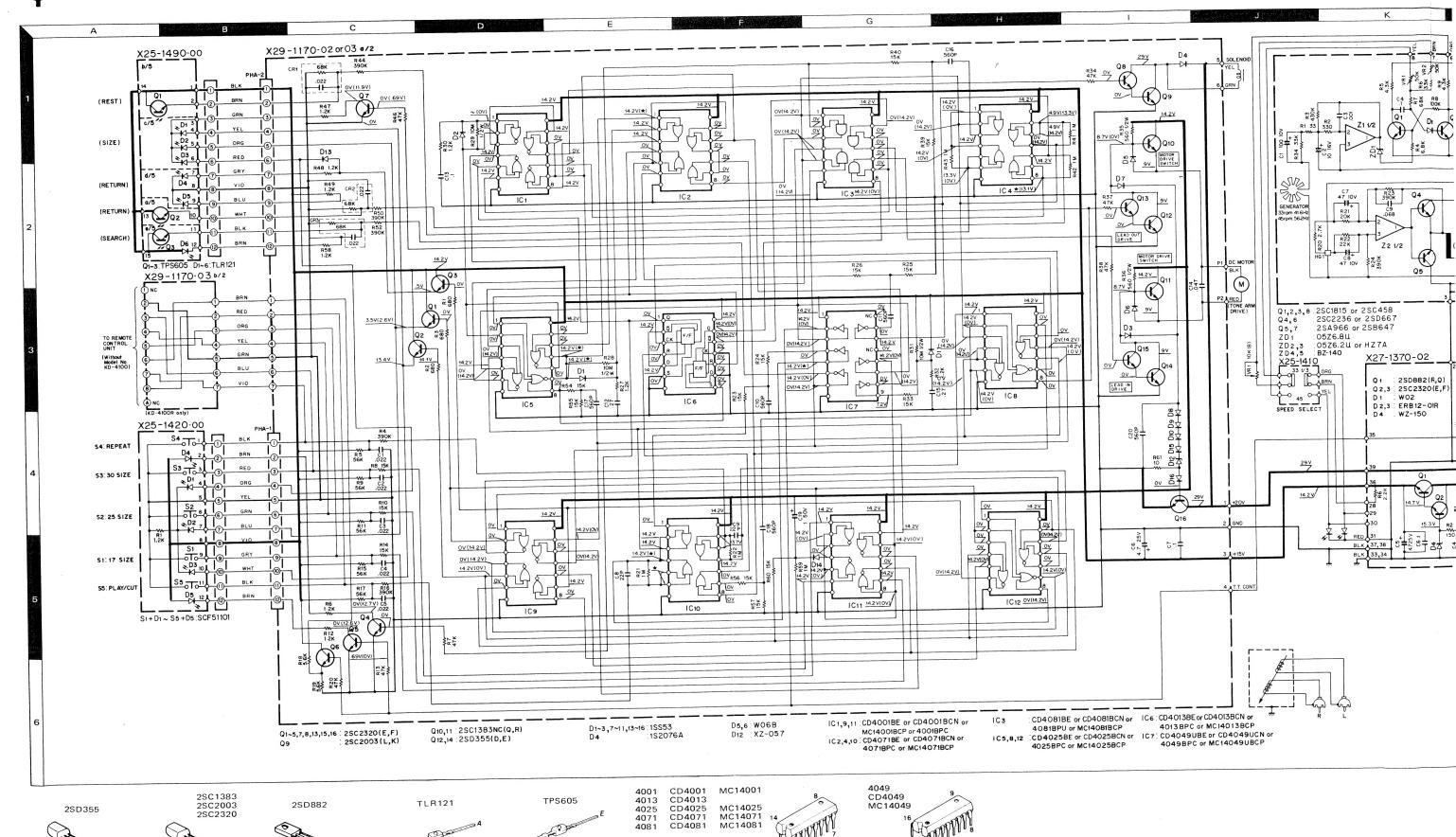
D12

:CD4049UBE or CD4049UCN or 4049BPC or MC14049UBCP

:XZ-057



### FULL AUTOMATIC DIRECT-DRIVE TURNTABLE



### FULL AUTOMATIC DIRECT-DRIVE TURNTABLE

CD4013 CD4025

CD4071 CD4081

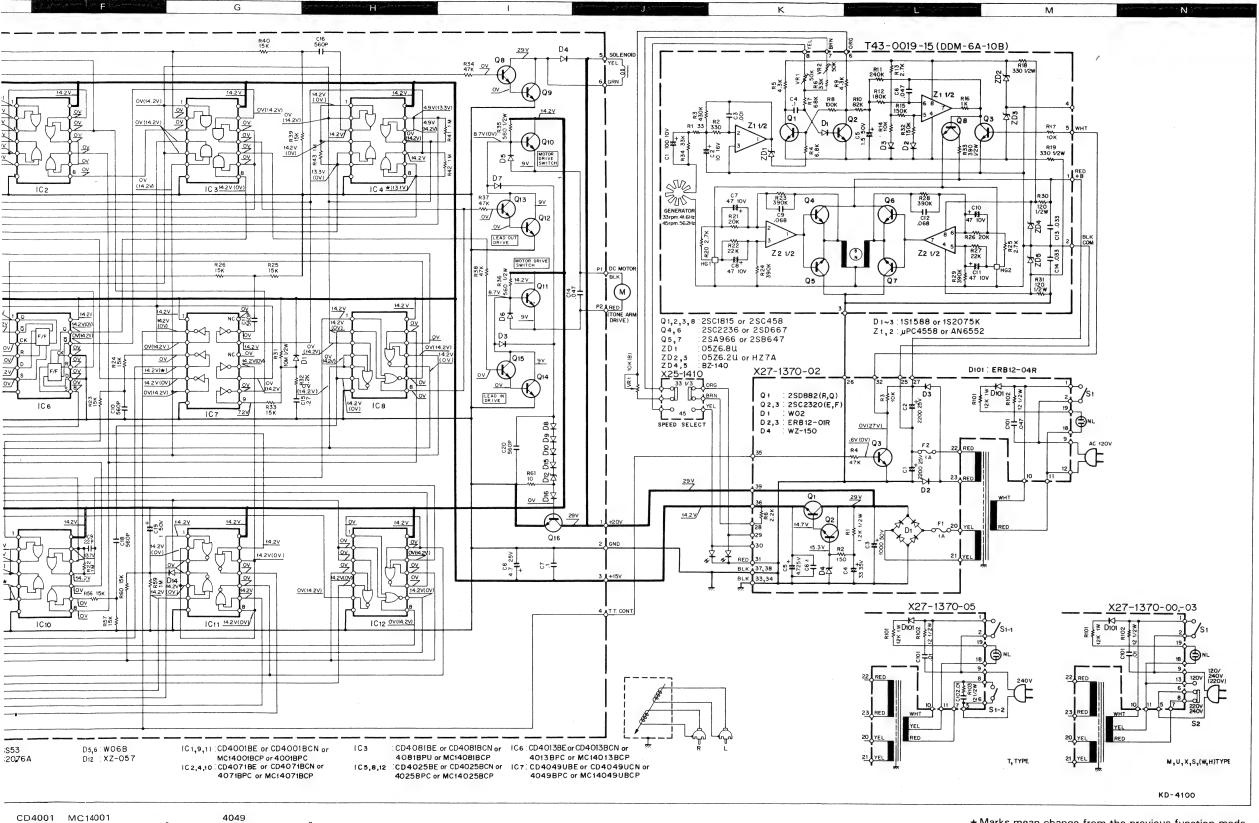
MC14025

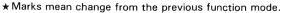
MC14071 MC14081

CD4049

MC14049

# (KD-4100R) **11-41**







### **SPECIFICATIONS**

MOTOR & TURNTABLE

Drive System	Direct-Drive
Motors	Coreless & Slotless DC Servo
	Motor (For Platter Drive),
	2-Pole, 3-Slot DC Micro-Motor
	(For Automatic Functions)
Turntable Platter	31 cm (12-3/16") Diameter,
	Aluminum Alloy Die-Cast.
	Weight 1.15 kg (2.54 lbs)
Speeds	2 Speeds, 33-1/3 and 45 rpm.
Speed Control Range	Within ±3%
Wow & Flutter	Less than 0.03% (WRMS)
Rumble	DIN weighted better than
	– 71 dB
TONEARM	
Type	
	Tubular Arm, EIA Plug-in Con-
	nector.
Effective Tonearm Length	225 mm (8-7/8'')
Overhang	15 mm (9/16'')
Tracking Error	± 1.5 Degrees
Stylus Pressure Variable Range .	0 to 3 grams
Usable Cartridge Weight	3 to 9 grams (with supplied
	headshell)
CARTRIDGE	
(U.S.A., Canada and U.K. Ma	odels are not equipped with t
V-39MKIII Cartridge.)	
Francisco de Constitución	A CONSTITUTE OF THE STATE OF TH

V-39MKIII (Moving Magnet Type) Furnished Cartridge N-39MKIII with 0.5 mil Diamond 20 Hz to 20,000 Hz Stylus . Frequency Response Output Voltage .........
Optimum Tracking Force . 2.3 mV (1,000 Hz, 5 cm/sec.) 1.5 + 0.3, - 0 gram Load Impedance 47 kohms N-39MKⅢ

Replacement Stylus .....
ADDITIONAL FEATURES Electronically Controlled Full-Automatic Tonearm System (Auto

matic Lead-in/Return/Cut/Repeat) Illuminated Stroboscope, Anti-Skating Device, Oil-Damped Cueing Device, Speed Selector Switch with LED Indicators, Low Capacitance Phono Cables, Head shell and 45 rpm Adaptor Stand, Stylus Pressure Direct Readout Counter, Built-in Insulators.

MISCELLANEOUS AC 120 V, 60 Hz...U.S.A. and Power Requirements Canada Models AC 240 V, 50 Hz...U.K. Model

AC 120 V/220 V, 50/60 Hz (Switchable)...European and Military Models AC 120 V/240 V, 50/60 Hz

(Switchable)...other countries Power Consumptions . 7.0 watts...U.S.A. and Canada

20.0 watts...Other countries W440mm×H140mm×D375mm W17-5/16"×H5-1/2"×D14-3/4"

Weight ......SUPPLIED ACCESSORY 7.9 kg (17.4 lbs) 45 rpm Adaptor CABINET

Material

Construction of the cabinet is of Anti-Resonance Compression
Base (ARCB) with injection molded ABS copolymer resin bottom cover. Massive ARCB is com-

pression molded from limestone powder and glass powder, bonded with polyester resin.

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

### **PARTS LIST**

Ref. No.	Parts No.	Description	Re- marks	Ref. No.	Parts No.	Description	Re- marks
参照番号	部品番号	部品名/規格	備考	参照番号	部品番号	部品名/規格	備考
UNIT	UNIT (KD-4100)			24 1A	p32-0080-24	SWITCH STOPPER	wH
4 24		SUB CHASSIS		25 2B	040-0459-05	MECHANISM ASSY	*
1 2A 2 2A	1	INDICATOR (STROBE)		26 1B	E30-0181-05	PCWER CORD	kP
3 2A	•	MOUNTING HARDWARE (LAMP)		26 1B	E30-0459-05	POWER CORD POWER CORD	ST
4 2B 5 2A	-	SWITCH MECHANISM ASSY PUSH LOCK		26 18 26 18	E30-0587-05	POWER CORD	MU
				26 18	E30-1341-05	POWER CORD	* X
6 2A 7 2B		SWITCH ARM SHAFT		27 1B	E30-1319-15	AUDIO CORD	MP
8 1A	-	CUSHION ASSY		27 1B	E30-1319-15	AUDIO CORD	UX
9 1A	-	HOLE PLATE		27 1B	E30-1319-15	AUDIO CORD AUDIO CORD	S h
10 1B	-	L SHAPED COVER 4100		27 1B 27 1B	E30-1319-15 E30-1320-25	AUDIO CORD	K
11 1B	-	REMOTE MOUNT METAL 4100R			507 0/10 0/	00110	
12 3B 13 1B	-	SHIELDING PLATE CUSHION		28 1A 28 1A	F07-0610-04	COVER	k P
13 10		COSHION		29 1A	F07-0657-04	MOTOR COVER	
14 2B	A02-0322-05	PLASTIC CABINET 4100	*M	30 2B	F19-0504-04	HOLE CAP	MU
14 28 14 28	A02-0322-05 A02-0322-05	PLASTIC CABINET 4100 PLASTIC CABINET 4100	KP UX	F1 ,2	F05-1023-05	FUSE(1A)	MO
14 2B	A02-0322-05	PLASTIC CABINET 4100	SW	F1 .2	F05-1023-05	FUSE(1A)	XS
14 2B	A02-0322-05	PLASTIC CABINET 4100	н	F1 ,2	F05-1024-05 F05-8012-05	FUSE(1A) FUSE(800MA)	KP WH
14 28	A02-0324-05	PLASTIC -CABINET 4100	*T	F1	F05-8012-05	FUSE (800MA)	T
14 2B	A02-0326-05	PLASTIC CABINET 4100R	* M	£5	F06-1021-05	FUSE(1A)	₩H
14 2B 14 2B	A02-0326-05 A02-0326-05	PLASTIC CABINET 4100R PLASTIC CABINET 4100R	KP UX	F2	F06-1021-05	FUSE (1A)	T
14 28	A02-0326-05	PLASTIC CABINET 4100R	SW				
1/ 20	A02-0326-05	GLASTIC CARINET (1000	١. ا	31 1A 31 1A	G16-0330-03 G16-0330-03	TURNTABLE SHEET ASSY TURNTABLE SHEET ASSY	MP
14 2B	A02-0327-05	PLASTIC CABINET 4100R PLASTIC CABINET 4100R	H ★T	31 1A	616-0330-03	TURNTABLE SHEET ASSY	Sim
15 2A	A21-0675-24	DRESSING PANEL ASSY		31 1A	G16-0330-03	TURNTABLE SHEET ASSY	нт
16 2A 17 3A	A21-0678-13 A40-0535-52	DRESSING PANEL ASSY BOTTOM PLATE	MP	31 1A	616-0331-03	TURNTABLE SHEET ASSY	K
		DOTTON PENTE		-	H01-2365-14	CARTON BOX 4100	* M
17 3A 17 3A	A40-0535-52 A40-0535-52	BOTTOM PLATE	UX	-	H01-2365-14	CARTON BOX 4100 CARTON BOX 4100	X S
17 3A	A40-0535-52	BOTTOM PLATE	HT	-	H01-2365-14	CARTON BOX 4100	н
17 3A	A40-0536-32	BOTTOM PLATE	K	-	н01-2366-14	CARTON BOX 4100	P
18 18	A53-0223-12	TURNTABLE COVER ASSY		-	H01-2367-14	CARTON BOX 4100	k
-	B46-0055-20	WARRANTY CARD	P	-	н01-2368-14	CARTON BOX 4100	T
-	846-0060-00 846-0061-20	WARRANTY CARD	T K	1:	H01-2370-04	CARTON BOX 4100R	MK
-	846-0062-20	WARRANTY CARD	ÜH	-	H01-2370-04	CARTON BOX 4100R	SH
-	846-0063-00	WARRANTY CARD	U		H01-2371-04	CARTON BOX 4100R	P
-	B46-0064-10	WARRANTY CARD	x 1	1:	H01-2372-04	CARTON BOX 4100R	W
-	B50-2346-00	INST. MANUAL 4100	*M	-	H01-2373-04	CARTON BOX 4100R	T
-	B50-2346-00 B50-2348-00	INST. MANUAL 4100 INST. MANUAL 4100	PX +K	1:	H10-2246-02	POLYSTYRENE FIXTURE A POLYSTYRENE FIXTURE B	
-	B50-2348-00	INST. MANUAL 4100	US		1110-2247 02	100101111011011011011011011011011011011	
				-	H10-2248-02	POLYSTYRENE FIXTURE C	
] -	B50-2348-00 B50-2349-00	INST, MANUAL 4100 INST, MANUAL 4100	WH +T	-	H12-0347-02	PACKING FIXTURE A PACKING FIXTURE	*
-	850-2350-00	INST. MANUAL 4100R	* M	-	H12-0354-04	PACKING FIXTURE B	
-	850-2350-00 850-2351-00	INST. MANUAL 4100R	PX KU	-	H20-0382-04	COVER	KP
		THE TRANSPORT		-	H20-0382-04	COVER	ŲΧ
-	850-2351-00	INST. MANUAL 4100R	SW	:	H20-0382-04	COVER	S W
:	B50-2351-00 B50-2352-00	INST. MANUAL 4100R INST. MANUAL 4100R	H T	-	H25-0029-04	BAG	"'
-	B59-0018-00	SERVICE STATIONS LIST	U	-	H25-0078-04	BAG	
19 1A	B23-0004-04	OVERHANG GAGE	KP	_	H25-0159-04	BAG	м
19 1A	B23-0004-04	OVERHANG GAGE	T				
20 ZA	B30-0724-05 B38-0211-05	LAMP DISPLAY ASSY (LED)	*	32 3B 32 3B	J02-0331-05	FOOT	MP
21 2A	630-0211-03	DISPLAT WSST (LEU)		32 3B	J02-0331-05	FOOT	SW
22 1A	D02-0028-05	TURNTABLE PLATTER		32 3B	J02-0331-05	FOOT	WH
23 1A 24 1A	D09-0202-04	STROBOSCOPE SWITCH STOPPER	MU	32 3B	J02-0334-05	FOOT	K
24 1A	032-0080-24		xs	33 2A	J19-1935-04	HOLDER (LAMP)	
L					1	L	

### PARTS LIST

Ref. No.	Parts No.	Description	Re-	Ref. No.	Parts No.	Description	Re
参照番号	部品番号	部品名/規格	marks	参照番号	部品番号	部品名/規格	ma
				-		C. 170H DCD 160"	1
4 2 B	J42-0312-05	BUSHING (A)		56 2A 57 2A	x25-1410-00 x25-1420-00	SWITCH PCB ASSY OPERATION PCB ASSY	*
5 18	J42-0313-05	BUSHING (B)			x25-1490-00	SENSOR PCB ASSY	
6 1B	J50-0307-05	HINGE(1)		58 3B			1
7 18	150-0308-05	HINGE(2)		59 21	x25-1510-00	REPEATER PCB ASSY	*
8 1 <sub>B</sub>	J91-0127-05	TONEARM ASSY	*	60 2A	x27-1370-00	POWER SUPPLY FOR ASSY	*
				60 2A	x27-1370-00	POWER SUPPLY POB ASSY	lu
9 18	J92-0057-05	HEAD SHALL		_			1
0 18	192-0058-05	HEAD SHALL ASSY	· KF	60 2A	x27-1370-00	POWER SUPPLY PCB ASSY	S
0 18	J92-0058-05	HEAD SHALL ASSY	T	00 .ZA	x27-1370-02	POWER SUPPLY PCB ASSY	K
0 16	372-0030-03	HEAD SHALL ASST		60 2A	x27-1370-03	POWER SUPPLY PCB ASSY	W
4 24	K23-0638-04	KNOB (SPEED)		60 2A	x27-1370-04	POWER SUPPLY PCB ASSY	P
1 2A			l I				1_
2 2A	K27-0317-14	KNCB (RPM)	l. I	60 2A	x27-1370-05	POWER SUPPLY PCB ASSY	T
3 2A	K29-0667-24	KNOB ASSY (SELECTOR)	*	61 3B	x29-1170-00	CONT AMP ASSY 4100R	*
				61 3B	x29-1170-00	CONT AMP ASSY 4100R	U
4 1 A	L01-6251-05	POWER TRANSFORMER	* K	61 38	x29-1170-00	CONT AMP ASSY 4100R	S
4 1A	L01-6251-05	POWER TRANSFORMER	P	61 3B	x29-1170-00	CONT AMP ASSY 4100R	Н
4 1 A	L01-6254-05	PCWER TRANSFORMER	MU	01 30	X		
4 1 A	L01-6254-05	POWER TRANSFORMER	xs	61 3B	x29-1170-01	CONT AMP ASSY 4100	*
4 1 A	101-6254-05	POWER TRANSFORMER	WH	61 3B	x29-1170-01	CONT AMP ASSY 4100	U
	.01-0234-03	TOTAL TRANSPORTER		61 38	x29-1170-01	CONT AMP ASSY 4100	S
,	101 6351 05	DOLER TRANSFORMED	7	1	x29-1170-01	CONT AMP ASSY 4100	Н
4 1 A	L01-6254-05	POWER TRANSFORMER	'		x29-1170-02	CONT AMP ASSY 4100	
				61 3B	1 427-1110-02	COMI AIN AGOI TIO	^
5 1 A	N09-0167-05	SCREW	WH	44 70	x29-1170-02	CONT AMP ASSY 4100	P
6 2B	N09-0195-04	SCREW	WH	61 3B	x29-1170-02	CONT AMP ASSY 4100R	*
6 28	N09-0275-04	SCREW (M3X25)	T	61 3B		CONT AMP ASSY 4100R	P
6 28	N30-3014-46	PAN HEAD MACHINE SCREW		61 3B	x29-1170-03		'
7 18	N09-0843-08	SCREW (M2,6X12)	MU	62 38	\$46-2308-03	MOUNTING SWITCH	
. ,-			1 1	SWITC	H PCB ASS'Y (X	25-1410-00)	
7 1B	N09-0843-08	SCREW (M2.6x12)	ХS	311110	11100 700 1 17	20 1410 00/	-
	N09-0843-08	SCREW(M2.6X12)	WH	101 2A	\$40-2307-05	PUSH SWITCH	S
			KP			. ()(00 4400 00)	
7 1B	N09-0850-04	SCREW(M2.6X10)		OPERA	TION PCB ASS"	Y (X25-1420-00)	
7 1B	N09-0850-04	SCREW (M2.6x10)	T	201 2A	559-1302-05	SWITCH S1-5	*
7 18	N09-0851-04	SCREW (M2.6x15)	KP				
				SENSO	R PCB ASS'Y (X	25-1490-00)	
7 1B	N09-0851-04	SCREW (M2.6x15)	T		7400 (0	7.0434	
8 2B	N14-0108-05	NUT	MU	01 -6	V11-3100-60	TLR121	- 1
8 2B	N14-0108-05	NUT	XS	Q1 -3	v30-0386-10	TPS605	*
8 2B	N14-0108-05	NUT	hH	POWER	SUPPLY PCB A	SS'Y (X27-1370)	
8 2B	1114-0412-04	NUT	KP				
			1 1	C1 ,2	c24-1422-89		
8 2B	N14-0412-04	NUT	T	c3	c24-1710-89		*
9 2B	N19-0175-09	WASHER	KP.	C 4	c24-6533-61	ELECTRO 33UF 35WV	
9 2B	N19-0175-09	WASHER	T	C 5	C24-1447-51	ELECTRO 4.7UF 25hV	
9 28	N19-0516-05	WASHER	MU	1 66	090-0270-05	CERAMIC 0.1UF K	-
			xs				1
9 28	N19-0516-05	WASHER	1,2	c101	c54-3310-39	CERAMIC 0.01UF P	l w
		10.000000	l I	c101,102	c54-3310-39	CERAMIC 0.01UF P	T
9 2B	N19-0516-05	WASHER	WH		c91-0302-05	CERAMIC 0.047UF K	l k
			1 1	C101			
0 2A	R01-3301-05	POT. 10K(B) VR1	1 1	C101	c91-0308-05	MF 0.01UF 1000V	M
				C101	C91-0308-05	MF 0.01UF 1000V	×
1 1A	s31-2001-05	SLIDE SWITCH (S2)	MU				
1 1A	s31-2001-05		xs	C101	c91-0323-05	CERAMIC 0.047UF K	F
1 1A	\$31-2001-05		WH				
			KP	-	J13-0055-05	FUSE HOLDER	
2 28	\$50-1015-05		1				1
2 28	\$50-1015-05	SENSITIVE SWITCH X2	T	R1C1	R47-5412-35	FL-PROOF RS12K J 3A	1
				R102	R40-8312-06	RC 12 K 2H	- 1
2 28	\$50-1015-05		UX				-
2 2B	\$50-1015-05		Swi	R102,103	R40-8312-06	RC 12 K ZH	
2 2B	\$50-1015-05		нм	1 .			
2 2B	\$50-1307-05		KP	D1	v11-2400-20	W02	
2 28	\$50-1307-05		UX	D2 ,3	V11-7100-60	ERB12-01R	
	050-1501-05	32.101.112	"	D4	V11-0307-05	wz-150	
2 26	\$50-1307-05	SENSITIVE SWITCH (S1)	SM	0101	v11-7100-70	ERB12-04R	
2 28	320=130/=05	SEMOTITAE SATICE (SI)	31	G1	V04-0882-20	2SD882(R,Q)	
	-24 00 0		I I	1 "	10-0002-20		1
3 28	T21-0066-05		MU	02 7	v03-2320-10	2002320(5.5)	
3 2B	T21-0066-05		XS	02 ,3	103-6360-10	2SC2320(E,F)	
3 2B	T21-0066-05	MAGNETIC CARTRIDGE ASSY	WH.	CONT	ROL (X29-1170)		
3a 2B	T21-0067-05	MAGNETIC CARTRIDGE	MU				-
3a 2B	T21-0067-05		XS	C1 -5	c55-1722-38		1
	1			C 6	c24-1447-51	ELECTRO 4.7UF 25WV	
3a 2B	T21-0067-05	MAGNETIC CARTRIDGE	WH	c7	c90-0270-05	CERAMIC 0.1UF K	
			7"	C8 ,9	c71-1722-05	CERAMIC 22PF J	
4 3 A	T43-0019-15	DIRECT DRIVE MOTOR	1	c10 ,11	c52-1756-16	CERAMIC 560PF K	
_				1010	1352,13010		
	W01-0057-14	EP ADAPTER	1 1	1		1	
1 A	1	1					

## KD-4100

### PARTS LIST

		<b>.</b>	Re-	Def. No.	Darta Ma	Description	Re-
Ref. No.	Parts No.	Description	marks	Ref. No.	Parts No.		marks
参照番号	部品番号	部品名/規格	備考	参照番号	部品番号	部品名/規格	備考
34 28	J42-0312-05	BUSHING (A)		56 2A	x25-1410-00	SWITCH PCB ASSY	
34 2H 35 1B	J42-0312-05	BUSHING(B)		57 ZA	x25-1420-00	OPERATION PCB ASSY	*
36 18	150-0307-05	HINGE(1)	1	58 3B	x25-1490-00	SENSOR PCB ASSY	*
37 1B	J50-0308-05	HINGE(2)	\	59 ZF	x25-1510-00	REPEATER PCB ASSY	*
38 1B	J91-0127-05	TONEARM ASSY	*	60 2A	x27-1370-00	POWER SUPPLY PCB ASSY	**
39 1B	J92-0057-05	HEAD SHALL		60 2A	x27-1370-00	POWER SUPPLY POB ASSY	UX
40 1B	J92-0058-05	HEAD SHALL ASSY	· K F	60 2A	x27-1370-00	POWER SUPPLY PCB ASSY	S
40 18	J92-0058-05	HEAD SHALL ASSY	T	60 2A	x27-1370-02 x27-1370-03	POWER SUPPLY FCB ASSY POWER SUPPLY PCB ASSY	K WH
	-			60 2A 60 2A	x27-1370-03	POWER SUPPLY PCB ASSY	P
41 2A	K23-0638-04	KNCB (SPEED)	1	00 CM	721-1310-04		1
42 2A	K27-0317-14	KNCB (RPM)		60 2A	x27-1370-05	POWER SUPPLY PCB ASSY	T
43 2A	K29-0667-24	KNOB ASSY (SELECTOR)	*	61 3B	x29-1170-00	CONT AMP ASSY 4100R	* 14
.,	104 (254 05	DOLER YRANGEOG: 55	1.,	61 38	x29-1170-00	CONT AMP ASSY 4100R	UX
44 1A	L01-6251-05	POWER TRANSFORMER	* K	61 3B	x29-1170-00	CONT AMP ASSY 4100R	Sw
44 1A 44 1A	L01-6251-05	POWER TRANSFORMER POWER TRANSFORMER	P	61 38	x29-1170-00	CONT AMP ASSY 4100R	HT
44 1A	101-6254-05	POWER TRANSFORMER POWER TRANSFORMER	X S	61 3B	x29-1170-01	CONT AMP ASSY 4100	<b>★</b> M <sub>i</sub>
44 1A	101-6254-05	POWER TRANSFORMER	WH	61 3B	x29-1170-01	CONT AMP ASSY 4100	UX
' ' '				61 38	x29-1170-01	CONT AMP ASSY 4100	Sw
44 1A	L01-6254-05	POWER TRANSFORMER	1	61 3B	x29-1170-01	CONT AMP ASSY 4100	нТ
				61 38	x29-1170-02	CONT AMP ASSY 4100	*K
45 1A	N09-0167-05	SCREW	WH		V20 1170 07	CONT AMP ASSY 4100	P
46 28	N09-0195-04	SCREW	WH	61 3B	x29-1170-02 x29-1170-03	CONT AMP ASSY 4100	* K
46 2B	N09-0275-04	SCREW (M3X25)	T	61 3B	x29-1170-03	CONT AMP ASSY 4100R	P
46 2B	N30-3014-46	PAN HEAD MACHINE SCREW	<u>, , ,                               </u>	61 38	\$46-2308-03	MOUNTING SWITCH	
47 1B	N09-0843-08	SCREW (M2.6X12)	MU		H PCB ASS'Y (X	1	
47 1B	N09-0843-08	SCREW(M2.6x12)	x s	101 2A	S40-2307-05	PUSH SWITCH	S 1
47 1B	N09-0843-08	SCREW(M2.6X12)	WH				131
47 1B	N09-0850-04 N09-0850-04	SCREW(M2.6X10) SCREW(M2.6X10)	KP T	OPERA	ATION PCB ASS"	r (X25-1420-00)	
47 18	N09-0851-04	SCREW(M2.6X10)	KP	201 2A	\$59-1302-05	SWITCH S1-5	*
47 18	N09-0851-04	SCREW(M2.6x15)	,	SENSO	R PCB ASS'Y (X	(25-1490-00)	
47 18 48 2B	N09-0851-04	SCREW(M2.6XIS)	MU	D1 -6	V11-3100-60	TLR121	*
48 28	N14-0108-05	NUT	XS	Q1 -3	v30-0386-10		
48 2B	N14-0108-05	NUT	WH	POWER	SUPPLY PCB A	SS'Y (X27-1370)	
48 28	N14-0412-04	NUT	KP	c1 ,2	c24-1422-89		T
48 28	N14-0412-04	NUT	1	c3	c24-1710-89	ELECTRO 1000UF 50WV	
49 28	N19-0175-09	WASHER	KP	C 4	c24-6533-61	ELECTRO 33UF 354V	1
49 2B	N19-0175-09	WASHER	T	C 5	c24-1447-51	ELECTRG 4.7UF 25hV	1
49 28	N19-0516-05	WASHER	MU	C 6	c90-0270-05	CERAMIC 0.1UF K	
49 28	N19-0516-05	WASHER	ХS	C101	054-3310-39	CERAMIC 0.01UF P	wн
	N40 054	HACHES	m.	C101 C101,102	c54-3310-39	CERAMIC 0.01UF P	T
49 2B	N19-0516-05	WASHER	WH	c101	c91-0302-05	CERAMIC 0.047UF K	K
50 2A	R01-3301-05	POT. 10K(B) VR1		c101	c91-0308-05	MF 0.01UF 1000V	MU
30 CA	.01-3301-03	ZOTA TORTON VAL		C101	C91-0308-05	MF 0.01UF 1000V	ХS
51 1A	s31-2001-05	SLIDE SWITCH (SZ)	MU	5101	101 0327 05	CERAMIC 0.047UF K	P
51 1A	\$31-2001-05		XS	c101	C91-0323-05	CERNIC O. DALOF K	1
51 1A	\$31-2001-05		WH	l -	J13-0055-05	FUSE HOLDER	
52 2B 52 2B	\$50-1015-05 \$50-1015-05		KP	1 -			
36 60	330-1013-03	SCHOOLITE SHITCH AE		R101	R47-5412-35		
52 28	\$50-1015-05	SENSITIVE SWITCH (S1)	UX	R102	R40-8312-06	1	_
52 ZB	\$50-1015-05	SENSITIVE SWITCH (S1)	Sw	R102,103	R40-8312-06	RC 12 K 2H	T
52 28	\$50-1015-05	SENSITIVE SWITCH (S1)	нм	L.4	W11 2/00 30	HU3	
52 2B	\$50-1307-05		KP	01	v11-2400-20 v11-7100-60	W02 ERB12-01R	
52 2B	\$50-1307-05	SENSITIVE SWITCH (S1)	UX	04	v11-0307-05		
52 25	s50-1307-05	SENSITIVE SWITCH (S1)	S.M.	0101	v11-7100-70	ERB12-04R	
52 2B				Q1	V04-0882-20	2SD882(R,Q)	*
53 28 53 28	T21-0066-05		MU XS	Q2 ,3	v03-2320-10	2sc2320(E,F)	
53 2B 53 2B	T21-0066-05	1	M.H.			1	
53a 2B	121-0067-05	MAGNETIC CARTRIDGE	MU		ROL (X29-1170)		
53a 28	T21-0067-05		xs	C1 -5	c55-1722-38		
				C 6	c24-1447-51 c90-0270-05		
53a 2B	T21-0067-05		WH	c7 c8 ,9	C71-1722-05		
54 3A	T43-0019-15	DIRECT DRIVE MOTOR	1	c10 .11	c52-1756-16	CERAMIC SOOPF K	
55 1A	w01-0057-14	EP ADAPTER					
1 "			1		,		

### **PARTS LIST**

Ref. No.	Parts No.	Description	Re-	Ref. No.	Parts No.	Description	Re-
参照番号	部品番号	部品名/規格	marks	参照番号	部品番号	部品名/規格	marks
<b>谷照番号</b>	部前食亏	a) na 11 / 27 11	備考	- M H 3	ду на д		C. 681
c12	c45-1727-45	MYLAR 0.27UF J		1010	v30-0381-10	MC14071BCP	
c13	c45-1710-45	MYLAR 0.1UF /J		1011	V30-0303-10 V30-0303-20	CD4001BE CD4001BCN	
c14	C55-1747-38 C45-1727-45	CERAMIC 0.047UF Z MYLAR 0.027UF J		1011	v30-0378-10	MC14001BCP	
c15 c16 -18	c52-1756-16	CERAMIC 560PF K		1011	v30-0385-10	4001BPC	*
C19	c25-1710-57	LL-ELEC TUF 50hV		1012	v30-0371-10	CD4025BE	*
C20	c52-1756-16	CERAMIC 560PF K		1012	v30-0372-10	CD4025ECN	*
704 40	E06-0801-05	D-11 COLUE C 7 OD / 1/ OD	MU	1012	V30-0373-10 V30-0379-10	4025BPC MC14025BCP	1:
301 1B 301 1B	E06-0801-05	DIN CONNECTOR 4160R	WH	01 -8	v03-2320-10	25C2320(E,F)	
301 18	E06-0801-05	DIN CONNECTOR 4100K	q				
301 18	E06-0801-05	DIN CONNECTOR 4100R	K	09	v03-2003-30 v03-1383-10	2sc2003(L,K) 2sc1383NC(Q,R)	*
301 18	E06-0801-05	DIN CONNECTOR 4100R	Sλ	Q10 ,11 Q12	V04-0355-10	250355(D/E)	
CR1 -3	R90-0403-05	MULTIPLE COMPONENTS	. 1	013	V03-2320-10	25C2320(E,F)	
R28 .29	R92-0507-05	RC 10" J 2H		014	V04-0355-10	250355(D,E)	*
R31	R92-0507-05	RC 10M J 2H		015 14	V03-2320-10	2sc2320(E,F)	
R35 ,36	R43-1456-15	FL-PROOF RD560 J ZE		Q15 ,16	ARM ASS'Y (J9		
D1 -3	v11-1200-80 v11-0273-05	15553 152076A		401 2B	012-0215-08	SLIDE CAM ASSY	*
05 ,6	V11-0295-05	WOGB		402 2B	021-0679-08	ELEVATION SHAFT	
07 -11	v11-1200-80	1\$\$53		403 2B	039-0090-08	TONEARM REST ASSY	
012	v11-4176-76	xz-057	*	404 2B 405 2B	D39-0091-08	TONEARM SUPPORT ASSY PAUSE MECHANISM ASSY	*
013 -16	v11-1200-80	15553		403 28	040-0403-00	TAGGE MECHANISM AGGI	
IC1	v30-0303-10	CD4001BE		406 2E	091-0122-08	WEIGHT ASSY	*
101	V30-0303-20	CD40016CN MC14001BCP		407 2B	601-0755-08	COMPRESSION SPRING	
101	V30-0378-10 V30-0385-10	4001BPC		408 2B	602-0322-08	TENSION SPRING	
	74 67/6 44				104 0437 05	TONEARY TOTAL ACCY	
105	v30-0368-10 v30-0369-10	CD4071BE CD4071BCN	*	38 2B 409 2B	J91-0127-05 J19-1921-08	TONEARM TOTAL ASSY TONEARM BASE	*
105	v30-0370-10	4071BPC	*	410 28	J19-1922-08	CAM HOLDER	
102	v30-0381-10	MC140718CP		411 2B	J91-0128-08	TONEARM	*
1 C 3	v30-0365-10	CD40816E	*	412 28	K29-0657-08	CANCELLER KNOB	
103	v30-0366-10	4081BPC	*				
103	V30-0367-10	CD4081BCN		413 2B	N09-0548-04	SET SCREW	
103	V30-0377-10	MC14081BCP CD4071BE	*	414 2B 415 2B	N10-2120-46 N19-0555-08	NUT	*
104	v30-0368-10 v30-0369-10	CD40718CN	*	416 28	N19-0556-08	WASHER	
				AUTON	ATIC MECHANI	ISM ASS'Y (D40-0459-05)	
104	v30-0370-10 v30-0381-10	4071BPC MC14071BCP	*	501 ZB	-	MAIN CHASSIS	
105	v30-0371-10	CD4025BE		502 28	-	SHAFT	
105	v30-0372-10	CD4025BCN	*	503 3B	-	POSITION GUIDER	
105	v30-0373-10	4025BPC	*	504 3B 505 3B		POSITION HOLDER	
105	v30-0379-10	MC14025BCP		1,03.38	-	J GEAR	
106	v30-0319-30	MC14013BCP	*	506 3B	-	CAM	
106	v30-0374-10	CD4013BE	*	507 3B	-	CAM HOLDER	
106	v30-0375-10 v30-0376-10	CD4013BCN 4013BPC	*	508 3B 509 3B	1	SLIDER CUSHION	
109	V30-0370-10	4013670		510 3B	-	ELEVATION ARM	
107	v30-0306-10	CD4049UBE					
107	V30-0306-20	CD4049UCN		511 3B	1:	RAIL	
107	V30-0380-10 V30-0384-10	MC14049UBCP 4049BPC	1:	512 3B 513 3B	1:	PIN	
1C7 1C8	v30-0371-10	CD4025BE	1.	514 2B	-	START POINTER	ĺ
				515 2B	-	RETURN HOLDER	
108	v30-0372-10 v30-0373-10	CD4025BCN 4025BPC		516 2B	_	POINT ADJUSTER	
108	V30-0373-10	MC14025BCP		517 38	-	COLLAR	1
109	v30-0303-10	CD4001BE		518 3B	-	PULLEY	1
103	v30-0303-20	CD4001BCN		519 2B	-	SHAFT RETAINER	
109	v30-0378-10	MC14001BCP		520 28	-	DEINSHER	
109	v30-0385-10	4001BPC		521 3B	-	WASHER (#3)	
1010	V30-0368-10	CD4071BE	*	522 28	-	WORM GEAR	
IC10	V30-0369-10 V30-0370-10	CD4071BCN 4071BPC	*	523 3B 524 3B	-	CLUTCH ARM ASSY	1
10,0	130-0310-10	10.10.0		525 3B	-	GEAR SHAFT	
				L	L		

### **PARTS LIST**

Ref. No.	Parts No.	Description	Re
参照番号	部品番号	部品名/規格	mark
526 38 527 38 528 38 529 38 530 38	-	SHAFT GEAR FELT IDLER TIER	
531 3B 532 3B	-	GEAR SEARCH ARM	
25 38 533 28 534 38 535 38 536 38	040-0459-05 013-0205-08 014-0217-08 015-0515-08 016-0219-08	MECHANISM ASSY GEAR ASSY IDLER ASSY MOTOR PULLEY BELT	* *
537 38 538 38	D40-0805-08 D33-0007-08	ELEVATION ARM ASSY FELT(A)	*
539 38 540 28 541 38 542 36 543 38	601-0722-08 601-0723-08 601-0724-08 601-0725-08 601-0726-08	COMPRESSION SPRING COMPRESSION SPRING(A) TENSION SPRING TENSION SPRING(3) TENSION SPRING(2)	*
544 3B 545 3B	G02-0319-08 G13-0458-04	FLAT SPRING MOTOR CUSHION	*
546 3B	J19-1918-08	SEARCH HOLDER	•
547 3B 548 2B 549 3B 550 3B 551 2B	N09-0869-08 N09-0870-08 N19-0584-08 N19-0561-08 N19-0565-08	SCREW SCREW WASHER RUBBER WASHER WASHER	
553 38 554 38 555 28 556 38	N19-0567-08 N29-0215-08 N15-1030-46 N19-0540-08	WASHER SPRING STOPPER FLAT WASHER WASHER	
557 3B 558 3B	T42-0107-05 T94-0058-05	DC MOTOR MAGNETIC PLUNGER	*
58 38	x25-1490-00	SENSOR PCB ASSY	•



	. No. 用番号	Parts No. 部品番号	Description 部 品 名 / 規 格	Re- marks 備考
	~			<u></u>
14	3 <b>A</b>	A20-1391-13	FRONT PANEL PANEL	∮ ≱H⊸
14	3A	A20-1417-13	FRONT PANEL ASSY	*T
15	3 <b>A</b>	A21-0302-03	DRESSING PANEL	*1
15	3 <b>A</b>	A21-0302-03	DRESSING PANEL	FIU
15	3A	A21-0302-03	DRESSING PANEL	MX
=	$\sim$			-
0.1	, C2	054-3310-39	CERAMIC 0. 01UF P	ET
6.1		090-0145-05	POLYESTER 0. 01UF AC125V	K
€ 1		091-0023-05	CERAMIC 0 01UF AC250V	UM
		091-0023-05	CERAMIC O 01UF AC250V	HX
€ 1		091~0025~05	CERAMIC O DIUE AC125V	
C1 C1		071-0025-05	CERAMIC O OTOF AC1250	F
	1 E:	D15-0155-13	PULLEY	F
€1	1B 1B			F.
C1 28		B15-0155-13	PULLEY	F

- 1 Exploded view drawing No.
- Position in exploded view.
- 3 Symblo of new parts
- Area to which parts are shipped, Example: A20-1390-13 is the part No. of FRONT PANEL ASS'Y for the "K" type products (for U.S.A.).

When this column is blank, it means that the same type of parts (same parts No.) are used for the products shipped to all areas.

CODEs in X11-1590

K: X11-1590-11

U: X11-1590-81

X11-1591-01

T: X11-1591-51

E: X11-1592-71

- (5) Reference No. in schematic diagram.
- Abbreviation of "ceramic capacitor"

All capacitors and resistors are listed using abbreviations.

Abbreviations

Abbreviations of capacitors (Parts No. with initial letter "C").

ELECTRO . . . . . . . Electrolytic capacitor

LL-ELEC . . . . . Low leak electrolytic capacitor NP-ELEC ..... Non-pole electrolytic capacitor

MICA . . . . . . . . Mica capacitor

POLYSTY . . . . . . . Polystyrene capacitor

MYLAR ..... Mylar capacitor CERAMIC . . . . . . . Ceramic capacitor TANTAL . . . . . . . . Tantalum capacitor

MF ..... Metallized film capacitor

OIL . . . . . . Oil capacitor

The unit "UF" is used in lieu of " $\mu$ F"

Abbreviations of resistors (Parts No. with initial letters "R").

RC . . . . . . . . . Carbon composition resistor

RD..... Carbon film resistor

FL-PROOF RD.... Flame-proof carbon film resistor RW ..... Wire wound power resistor

FL-PROOF RS . . . . . Flame-proof metal oxide film resistor

RN ..... Metal film resistor

1/8W 2B ..... Rated wattage

2E	Rated wattage	1/4W
2H		1/2W
3A	Rated wattage	1W
3D	Rated wattage	2W
3F	Rated wattage	3W
3G	Rated wattage	4W
3H	Rated wattage	5W
All r	esistor values are indicated with the	unit $(\Omega)$
omit	ted.	

Abbreviations common to capacitors and resistors.

C	 ±0.25pF (Used for capacitors only)
D	 ±0.5pF (Used for capacitors only)
F	 ±1%
G	 ±2%
J	 ±5%
Κ	 ±10%

M .... ±20% ..... +80%,-20%(Used for capacitors only) +100%, -0% (Used for capacitors only)

Resistors RD (carbon composition resistors) are not listed in the parts list. For values, refer to the schematic diagram.

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

Region	Code
U.S.A	K
Canada	
PX	U
Australia	X
Europe	W
England	Т
South Africa	S
Other Areas	M
Audio Club	н

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